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EXAMINER	
LE, MIRANDA	
ART UNIT	**PAPER NUMBER**
2167	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/737,213	DOUGLIS ET AL.	
	Examiner	Art Unit	
	Miranda Le	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,7-15,17-20 and 24-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 7-15, 17-20, 24-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-36 are pending in this application. In the Amendment, claims 4-6, 16, 21-23, 35-36 have been cancelled, and claims 1, 12, 18, 29, 34 have been amended. This action is made Final.

Claims Objections

2. Minor formality: Claim 24 is objected because it improperly depends on claim 21, which is cancelled. For purpose of examination, claim 24 is treated as it depends on claim 18.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-36 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

(a) Claim 1 defines non-statutory processes because as a whole, they merely present an abstract idea without any practical application that produces a useful, concrete and tangible result.

It is suggested that the phrase "storing the reduced object in a computer readable media" should be changed to "storing the reduced object in a computer **storage** readable media".

(b) Claim 18 is the apparatus performs the method of claim 1, has the same type of issues as (a), therefore, is rejected under similar rationale. In addition, each of the means is reasonably interpreted in view of the specification as just software, the claimed system is not limited to

embodiments which includes the hardware necessary to enable any underlying functionality to be realized, instead being software per se.

It is recommended that the phrase "means for storing the reduced object in a computer **storage** readable media" should be included in the claim in order to overcome the issue.

(c) Claim 34 has the same issues as (a) therefore, is rejected under similar rationale. Plus, the claims fail to fall within a category of patentable subject matter set forth in 35 U.S.C. 101. The specification, page 16, lines 7-18, defines "computer-readable medium" as including both storage media (i.e., memory) and communication media (i.e., wave, signal). A computer-readable medium including a carrier wave, or signal, is non-statutory subject matter as set forth in MPEP 2106 (IV)(B)(2)(a). As such, claim 34 is not limited to tangible embodiments, the claim is not limited to statutory subject matter and is therefore non-statutory.

It is advised that the "computer readable medium" should be read as "computer storage readable medium"; and "storing the reduced object in a computer readable media" should be changed to "storing the reduced object in a computer **storage** readable media".

Claims 2-3, 7-15, 17, 19-2024-33 are dependent upon claims 1, 18 suffer from deficiencies similar to their respective base claim, and therefore are likewise rejected.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 10, 17, 18, 27, 33, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cousins et al. (US Pub. No. 20020107866), in view of Lee et al. (US Pub. No. 20030085823).

As to claims 1, 34, Cousins teaches a method, in a data processing system, for reducing the size of an object *(i.e. By compressing the markup language files using the method of the present invention, one can obtain approximately 15% to 20% reduction in the size of the file, [0019])*, the method comprising:

dividing an object *(i.e. markup language files)* into a plurality of blocks *(i.e. tags, attributes of the tags, white spaces ,text) ([0011-0014]);*

identifying similar blocks *(i.e. "<table>" and "<TABLE>", [0015])* within the plurality of blocks *([0011-0015]); and*

identifying identical blocks *(i.e. white spaces)* within the plurality of blocks; and

suppressing *(i.e. eliminated)* the identical blocks without differential compression the identical blocks *(i.e. white spaces and end-of-line characters are eliminated to decrease the size of the file, [0011]);*

performing data compression on at least one block within the plurality of blocks, wherein the at least one block is not differentially compressed *(i.e. GZIP compression algorithm, [0011])*,

wherein the at least one block is not suppressed, and wherein the step of performing data compression on the at least one block forms a reduced object *(i.e. By compressing the markup language files using the method of the present invention, one can obtain approximately 15% to 20% reduction in the size of the file, [0019])*; *and*

storing the reduced object in a computer readable media *(i.e. The Internet has made a voluminous amount of documents stored on computers around the world readily available to anyone having a computer, [0003])*.

Cousins does not specifically teach differentially compressing the similar blocks.

However, Lee teaches differentially compressing the similar blocks *(i.e. The data compressor receives a series of N data elements, where N is a positive integer, and computes respective differences between two adjacent data among the data. When the differences are all less than a reference value, the data compressor generates delta data on the basis of the differences, receives a series of N new data elements the series of the prior data, and returns to the step of computing the differences, [0045])*.

It would have been obvious to one of ordinary skill of the art having the teaching of Cousins and Lee at the time the invention was made to modify the system of Cousins to include the limitations as taught by Lee. One of ordinary skill in the art would be motivated to make this combination in order to generate the delta data comprises converting the differences between the two adjacent data into the corresponding delta values, and concatenating the delta values in series to generate the delta values in view of Lee, as doing so would give the added benefit of providing a better method for compressing data, which can improve the compression efficiency

when the differences between the adjacent data elements are small as taught by Lee *([0043-0046]).*

As per claim 18, Cousins teaches a data processing apparatus for reducing the size of an object, the apparatus comprising:

software instructions and hardware for executing the software instructions *(i.e. The Internet has made a voluminous amount of documents stored on computers around the world readily available to anyone having a computer, a modem, a phone line and some kind of browser software , [0003])* wherein the software instructions further comprise:

division means for dividing an object *(i.e. markup language files)* into a plurality of blocks *(i.e. tags, attributes of the tags, white spaces ,text) ([0011-0014]);*

identification means for identifying similar blocks *(i.e. "<table>" and "<TABLE>", [0015])* within the plurality of blocks *([0011-0015]); and*

means for identifying identical blocks *(i.e. white spaces)* within the plurality of blocks; and

means for suppressing *(i.e. eliminated)* the identical blocks without differential compression the identical blocks *(i.e. white spaces and end-of-line characters are eliminated to decrease the size of the file, [0011]);*

means for performing data compression on at least one block within the plurality of blocks, wherein the at least one block is not differentially compressed *(i.e. GZIP compression algorithm, [0011]),* wherein the at least one block is not suppressed, and wherein the step of performing data compression on the at least one block forms a reduced object *(i.e. By*

compressing the markup language files using the method of the present invention, one can obtain approximately 15% to 20% reduction in the size of the file, [0019]).

Cousins does not fairly teach compression means for differentially compressing the similar blocks.

Lee teaches compression means for differentially compressing the similar blocks *(i.e. The data compressor receives a series of N data elements, where N is a positive integer, and computes respective differences between two adjacent data among the data. When the differences are all less than a reference value, the data compressor generates delta data on the basis of the differences, receives a series of N new data elements the series of the prior data, and returns to the step of computing the differences, [0045]).*

It would have been obvious to one of ordinary skill of the art having the teaching of Cousins and Lee at the time the invention was made to modify the system of Cousins to include the limitations as taught by Lee. One of ordinary skill in the art would be motivated to make this combination in order to generate the delta data comprises converting the differences between the two adjacent data into the corresponding delta values, and concatenating the delta values in series to generate the delta values in view of Lee, as doing so would give the added benefit of providing a better method for compressing data, which can improve the compression efficiency when the differences between the adjacent data elements are small as taught by Lee *([0043-0046]).*

As to claims 10, 27, Cousins teaches the method of claim 1, wherein identifying similar blocks *(i.e. "<table>" and "<TABLE>", [0015])* includes identifying one or more features of the plurality of blocks *(i.e. tags, attributes of the tags, white spaces,text) ([0011-0014]).*

As to claims 17, 33, Cousins teaches the method of claim 1, wherein the reduced object is transmitted over a network *(i.e. This allows for increased speed in the transmission of the web document file, [0019]).*

6. Claims 2, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cousins et al. (US Pub. No. 20020107866), in view of Lee et al. (US Pub. No. 20030085823), and further in view of Riggs et al. (US Pub No. 20040199669).

As to claims 2, 19, Cousins and Lee do not specifically teach the plurality of blocks are fixed in size.

However, Riggs teaches the plurality of blocks are fixed in size *(i.e. 2 MB sized block, [0029]).*

It would have been obvious to one of ordinary skill of the art having the teaching of Cousins, Lee and Riggs at the time the invention was made to modify the system of Cousins and Lee to include the limitations as taught by Riggs. One of ordinary skill in the art would be motivated to make this combination in order to asynchronously compress each block in accordance with a preselected compression utility in view of Riggs, as doing so would give the added benefit of allowing for rapid compression and decompression asynchronously of file blocks as taught by Riggs ([0029]).

7. Claims 3, 7-9, 15, 20, 24-26, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cousins et al. (US Pub. No. 20020107866), in view of Lee et al. (US Pub. No. 20030085823), and further in view of Wightman (US Pub No. 5,850,565).

As to claims 3, 20, Cousins and Lee do not explicitly teach the plurality of blocks are variable in size and determined based on characteristics of content of the object.

Wightman teaches the plurality of blocks are variable in size and determined based on characteristics of content of the object *(i.e. dividing the input file into portions of respective non-preset sizes, col. 12, lines 25-30).*

It would have been obvious to one of ordinary skill of the art having the teaching of Cousins, Lee and Wightman at the time the invention was made to modify the system of Cousins and Lee to include the limitations as taught by Wightman. One of ordinary skill in the art would be motivated to make this combination in order to select the strings that are likely to be most amenable to delta compression in view of Wightman *(col. 2, line 49-62),* as doing so would give the added benefit of performing the improved data compressor that uses variable-length strings and is therefore free of these restrictions as taught by Wightman *(col. 3, lines 32-39).*

As to claims 7, 24, Cousins teaches compressing the object to form a compressed object *(i.e. By compressing the markup language files using the method of the present invention, one can obtain approximately 15% to 20% reduction in the size of the file, [0019]);*

the compressed object *(i.e. GZIP compression algorithm, [0011]);*

the reduced object *(i.e. white spaces and end-of-line characters are eliminated to decrease the size of the file, [0011]).*

Cousins and Lee do not specifically teach:

comparing an effectiveness of the compressed object with an effectiveness of the reduced object; and

using the compressed object if the effectiveness of the compressed object is greater than the effectiveness of the reduced object.

However, Wightman teaches the step of comparing an effectiveness of the compressed object for selecting a compression mode *(i.e. The selection of the compression mode depends on which technique can compress the string with a higher compression ratio, col. 2, line 63 to col. 3, line 9).*

It would have been obvious to one of ordinary skill of the art having the teaching of Cousins, Lee and Wightman at the time the invention was made to modify the system of Cousins and Lee to include the limitations as taught by Wightman. One of ordinary skill in the art would be motivated to make this combination in order to provide the highest overall compression ratio in view of Wightman *(col. 2, line 49-62),* as doing so would give the added benefit of performing the improved data compressor that uses variable-length strings and is therefore free of these restrictions as taught by Wightman *(col. 3, lines 32-39).*

As to claims 8, 25, Wightman teaches the method of claim 7, wherein effectiveness is measured by one of speed of execution and object size *(i.e. The compressor 124 calculates the frequencies with which the unique characters (data values), the relative offset and the lengths are written to the temporary file 226, col. 6, line 62 to col. 7, line 9).*

As to claims 9, 26, Cousins teaches the compressed object *(i.e. GZIP compression algorithm, [0011]);*

the reduced object *(i.e. white spaces and end-of-line characters are eliminated to decrease the size of the file, [0011]).*

Cousins and Lee do not expressly teach if the effectiveness of the compressed object is less than the effectiveness of the reduced object.

However, Wightman teaches the step of comparing an effectiveness of the compressed object for selecting a compression mode *(i.e. The selection of the compression mode depends on which technique can compress the string with a higher compression ratio, col. 2, line 63 to col. 3, line 9).*

It would have been obvious to one of ordinary skill of the art having the teaching of Cousins, Lee and Wightman at the time the invention was made to modify the system of Cousins and Lee to include the limitations as taught by Wightman. One of ordinary skill in the art would be motivated to make this combination in order to provide the highest overall compression ratio in view of Wightman *(col. 2, line 49-62),* as doing so would give the added benefit of performing the improved data compressor that uses variable-length strings and is therefore free of these restrictions as taught by Wightman *(col. 3, lines 32-39).*

As to claims 15, 32, Cousins and Lee do not specifically teach identifying similar blocks includes: using heuristics to identify similar blocks.

Wightman teaches using heuristics to identify similar blocks *(i.e. a heuristic might calculate the figure of merit from the contents of the string, col. 8, lines 12-24).*

It would have been obvious to one of ordinary skill of the art having the teaching of Cousins, Lee and Wightman at the time the invention was made to modify the system of Cousins and Lee to include the limitations as taught by Wightman. One of ordinary skill in the art would be motivated to make this combination in order to provide the highest overall compression ratio in view of Wightman *(col. 2, line 49-62),* as doing so would give the added benefit of performing the improved data compressor that uses variable-length strings and is therefore free of these restrictions as taught by Wightman *(col. 3, lines 32-39).*

8. Claims 11, 12, 28, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cousins et al. (US Pub. No. 20020107866), in view of Lee et al. (US Pub. No. 20030085823), and further in view of McCanne et al. (US Pub. No. 20040174276).

As to claims 11, 28, Cousins and Lee do not specifically teach identifying one or more features includes calculating one or more fingerprints for the plurality of blocks.

However, McCanne teaches identifying one or more features includes calculating one or more fingerprints for the plurality of *blocks (i.e. the function evaluates to 1 for a given fingerprint having a given offset and window, [0049]).*

It would have been obvious to one of ordinary skill of the art having the teaching of Cousins, Lee and McCanne at the time the invention was made to modify the system of Cousins and Lee to include the limitations as taught by McCanne. One of ordinary skill in the art would be motivated to make this combination in order to determining whether the offset is to be designated as a cut point and segmenting the input data as indicated by the set of cut points in view of McCanne, as doing so would give the added benefit of providing the compression that

can potentially make it feasible to use a low bandwidth link for high bandwidth applications since it reduces the number of actual bits required to represent a larger input sequence. Similarly, compression can potentially enhance performance or capacity of a file system by reducing the number of bits required to represent all of the files in the system as taught by McCanne *([0009])*.

As to claims 12, 29, McCanne teaches identifying similar blocks further includes:

merging the one or more fingerprints for the plurality of blocks to form one or more fingerprint groups *(i.e. The input data might include sequences of symbols that repeat in the input data or occur in other input data encoded in the system. The encoding includes determining one or more target segment sizes, determining one or more window sizes, identifying a fingerprint within a window of symbols at an offset in the input data, [0020]);*

calculating super fingerprints for the one or more fingerprints groups *(i.e. Similarly it might use a different fingerprint function and/or a different fingerprint window size at each level in the hierarchy, or use the same functions uniformly throughout, [0061]);*

comparing the super fingerprints to each other to determine common features among the super fingerprints *(i.e. identifying a fingerprint within a window of symbols at an offset in the input data, determining whether the offset is to be designated as a cut point and segmenting the input data as indicated by the set of cut points, [0020]).*

9. Claims 13, 14, 30, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cousins et al. (US Pub. No. 20020107866), in view of Lee et al. (US Pub. No. 20030085823), and further in view of Pulst et al. (US Pub. No. 20030212653).

As to claims 13, 30, Cousins and Lee identifying similar blocks further includes: determining whether blocks have a specified number of matching features.

However, Pulst teaches determining whether blocks have a specified number *(i.e. classifiable features; [0046]; Fig. 20)* of matching features *(i.e. processing is performed by enriching the matrix with classes for the features while retaining the number of data records and compressing according to the classes, reducing the number of data records, [0008]).*

It would have been obvious to one of ordinary skill of the art having the teaching of Cousins, Lee and Pulst at the time the invention was made to modify the system of Cousins and Lee to include the limitations as taught by Pulst. One of ordinary skill in the art would be motivated to make this combination in order to take into account correlating instances of features and classes in enrichment and compression in view of Pulst *([0029]),* as doing so would give the added benefit of performing a process by enriching the matrix with classes for the features while retaining the number of data records and compressing according to the classes, reducing the number of data records as taught by *Pulst ([0008]).*

As to claims 14, 31, Cousins and Lee do not specifically teach identifying similar blocks further includes: identifying a reference block that matches a greatest number of features of remaining similar blocks.

Pulst teaches identifying a reference block that matches a greatest number of features of remaining similar blocks *(i.e. Processing 430 is performed by enriching 431 the matrix with classes K for the features M (retaining the number of data records DS), and compressing 432 according to classes K (with a reduction in the number of data records DS), [0101]).*

One of ordinary skill in the art would be motivated to make this combination in order to take into account correlating instances of features and classes in enrichment and compression in view of Pulst *([0029]),* as doing so would give the added benefit of performing a process by enriching the matrix with classes for the features while retaining the number of data records and compressing according to the classes, reducing the number of data records as taught by *Pulst ([0008]).*

Response to Arguments

10. Applicant's arguments regarding the proposed combinations of Trout, Krapp, Bentley, Burrows with respect to claims 1-36 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham, can be reached on (571) 272-7079. The fax number to this Art Unit is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Miranda Le
December 28, 2006

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